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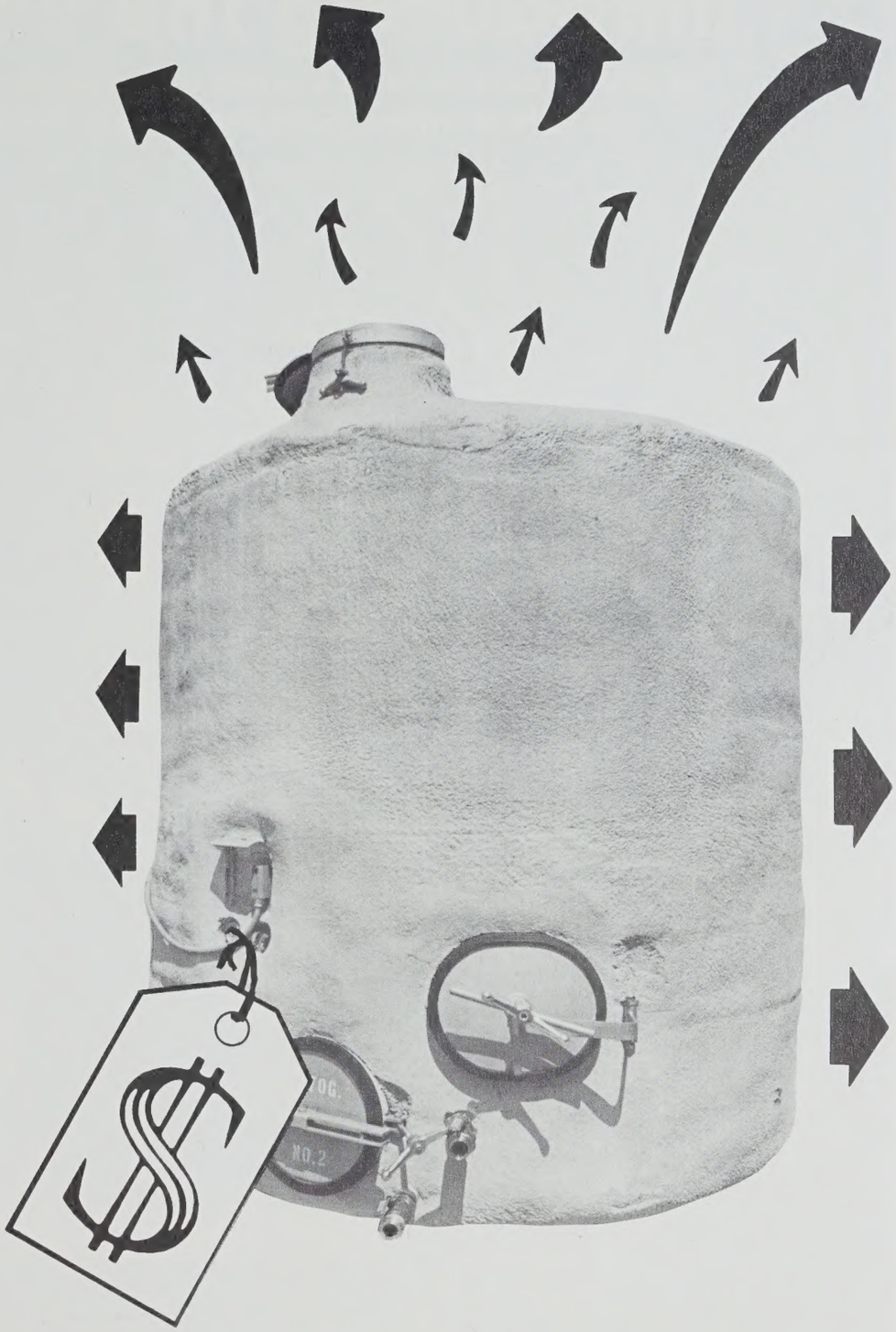

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July-August 1982

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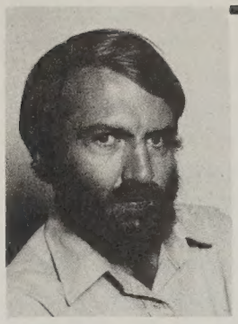

FREE RUN
OF THE EDITOR
— DON NEEL —

For our cover story, I visited several wineries to report on the energy savings and increased efficiency of refrigeration equipment when tanks are insulated. The results are significant, and I believe many more winemakers will be installing insulation very soon.!

I hope the barrel shaving information answers some questions that many winemakers have on how to get more use out of their barrels.

Many interesting and different approaches are evident in the Sauvignon Blanc interviews.

More and more vendors of secondary closures are coming into the marketplace. I hope our guide makes your purchasing easier!

I am glad to see the improved dependability of the variable capacity tank (VCT), which is gaining greater acceptance in wineries. VCT can eliminate the guessing game of gas addition to tank headspace.

Several readers have been very helpful with suggestions of new topics. Listed below are topics on which I invite readers to submit specific questions:

Refrigeration – at least two contractors have agreed to assist me in presenting the various alternative solutions in winery heat-transfer situations. The contractors have promised reports for several upcoming issues to adequately cover the subject.

Malolactic fermentation – choice of bacteria, when to inoculate and why?

Red wine fermentation – punching down, pumping over, submerged cap: benefits of each.

Filtration of botrysized Rieslings with polysaccharides which may blind filter media.

Our regular features on the computer in wineries, marketing, and education/research will return next issue. Denis Kelly's column on wood and wine will premiere in our next issue.

I hope to give an in-depth look at roto-fermenters at several Napa Valley wineries in the next issue.

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PRACTICAL WINERY

July-August 1982
Volume III, No. 2

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Practical Winery is published bi-monthly by Don Neel and Associates. Editorial and Business offices: 15 Grande Paseo, San Rafael, CA 94903 (415) 479-5819. Subscription Rate: $20/year. Outside the United States, please add $4/year

BARRELS:
How to Shave Their Costs

There are three basic methods of shaving barrels: wire brush, router, and knife. PW found three firms who each use one of the methods: wire brush, Custom Cooperage; router, Barrel Builders; knife, S. DeBella Barrel Co.

CUSTOM COOPERAGE

A barrel is placed into a jig which will mechanically rotate the barrel at the operator's command. The operator guides the wire brush which cuts a swath 1½" wide (approximately one-half stave width) and about one-quarter inch deep exposing new dry wood.

The shaving routine is: the operator guides the brush into the barrel cleaning one-half stave, rotates the barrel one-half stave, guides the brush out of the barrel cleaning the newly positioned wood. The jig allows the operator to shave within ½" of the croze.

WIRE BRUSH is guided into barrel by Bob Rogers at Custom Cooperage.

Due to the process being hand-controlled, any missed area can be touched up by the operator. The wire brush works best on wet wood, because the dry wood helps guide the operator on the desired depth of cut.

"We recommend working on barrels that have been out of wine production less than three weeks. We request soaking up the barrel with water for two-three days before shaving. Wet dust is safer for the operator, and easier to work with," says Bob Rogers, owner of Custom Cooperage.

Heads of the barrel are cleaned with a grinder to a smooth finish taking off a little less than ¼". Standard process also includes trueing the roundness of the bung hole.

Shaved barrels are sulphured with one-third of a sulphur wick upon re-assembly. "We will not allow an unsulphured-shaved barrel to sit here overnight. We prefer the barrel to be very lightly sulphured from the winery or not sulphured at all for our safety.

"We don't like to shave French barrels more than once, because it is a softer, more porous wood and there tends to be more ullage or leaking at the ends of the staves after a second shaving. American oak can probably be shaved twice, because it is a more dense, harder wood," says Rogers.

Much of Rogers' work is done on barrels between four and seven years of age, with the average age being five years. Many French barrels used for white wine have been shaved after three years. Another common practice is using a new barrel for white wine—two-three years, red wine—two years, then shave the barrel for additional red wine production.

Due to tartar buildup from primarily Zinfandel, less from Cabernet, Chardonnay, and Sauvignon Blanc, less wood may have to be removed.

Recharring (roasting) after shaving can be done with a fire pot which burns oak chips, which does not leave a resinous smell. Heavy roast is difficult, light or medium roast is recommended.

"There are some problems with roasting—To roast the wood, you must get the wood very hot, which requires a lid on one end to achieve a heat of 250° or over 300° for a long period. That intense heat at the top of the barrel can dry out the staves and cause shrinkage which will require additional swelling time. We have developed a shielding device to protect the top half of the barrel and alleviate the problem," says Rogers.

Rogers recommends swelling the barrel after shaving until there are no leaks plus one more day, and then the barrel will be ready for wine from one-three weeks. Roasted barrels take one-two extra days to swell up.

Rogers notes that French oak swells faster and will hold moisture longer, American oak, the opposite.

Winemakers buying used whiskey barrels are advised by Rogers to have them shaved and roasted. Roasting will volatilize all the alcohol and leave a smooth, baked wood, American oak smell. The roasting alleviates the need for leaching the barrel with SO_2, citric acid and soda ash, which will remove one-two years of wood flavor.

The average shaving fee is $12 per barrel. Quantity discounts apply to orders over 50 barrels. Shaving and roasting can be done for about $14-15 per barrel.

BARREL BUILDERS

A barrel is placed into a jig which will automatically rotate the barrel around a cutter head on a router. The feed is adjustable and the router takes a typical cut of 1/16-1/8". The jig will handle 52-135 gallon barrels.

"Generally, we require a barrel to be out of wine less than a month or soaked with water for a week prior to shaving, so that the staves are tight and no sawdust will get into the joints," says John Guilliams.

Due to imperfections of the wood's surface from original manufacture, the router cleans up about 95% of the barrel. The router goes up to one inch from the croze, and a hand sander finishes the stave. The hand sander will also clean up any peelings left by the router and take off any sharp edges. Heads are surface planed.

"We can toast barrels at a winemaker's request over a fire pot with small pieces of oak," adds Guilliams.

According to Guilliams, most people shave barrels only once at about four years of age. "Depending on the coopering process, you can shave a transport barrel which has a one inch thick stave – twice. We recommend shaving a chateau barrel once.

"We do not see much tartar buildup, as many people use soda ash to remove tartar. Shaving can help solve

UNSHAVED BARREL is placed onto router jig by Henry Work at Barrel Builders. Barrel shaving photos by J. Michael Kanouff

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biological problems in the barrel in conjunction with chemical treatment," says Guilliams.

Minor repairs at the croze are included in the shaving cost. Barrels are sulphured from an SO_2 dispenser after reassembly. Washing/rinsing of the barrel after shaving with water is recommended.

"We can give winemakers the best service on shaving in winter," says Guilliams. Shaving cost will be $10-14 per barrel depending on the original manufacture.

S. DEBELLA BARREL CO.

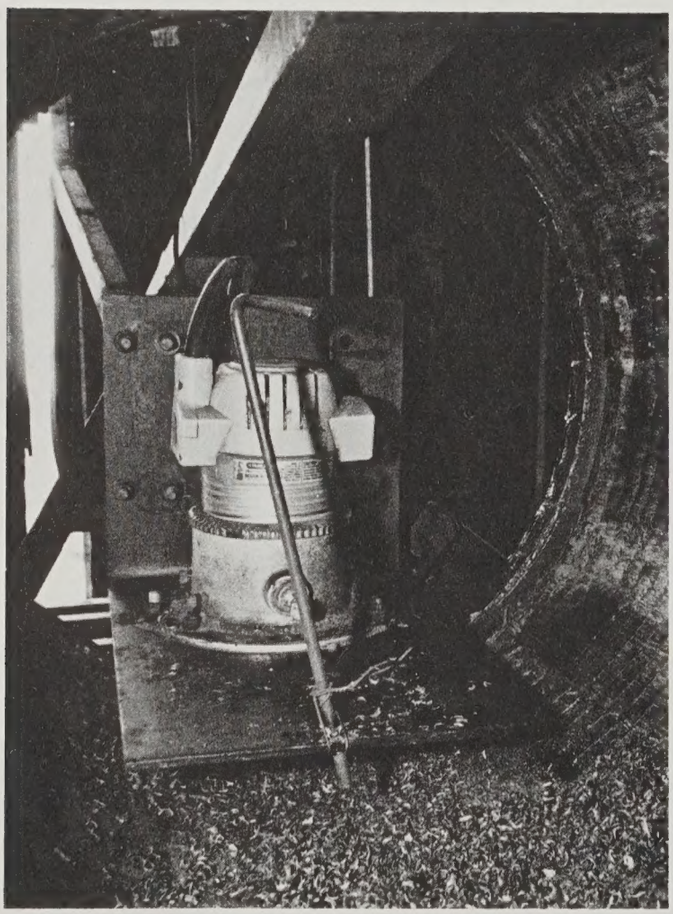
A jig rotates the barrel against a rotating cutting tool which is conceptually a mechanized knife. The process does not leave the tracks of a router or the grit of a wire brush, but does leave a little more char. The standard cut is 1/16" which takes out 90% of the char.

"Once you even out the inner surface the first time, you can take off less the next time, just to clean it up. In one case, we have shaved some French barrels four times, every two years for red wine use," says Stan DeBella.

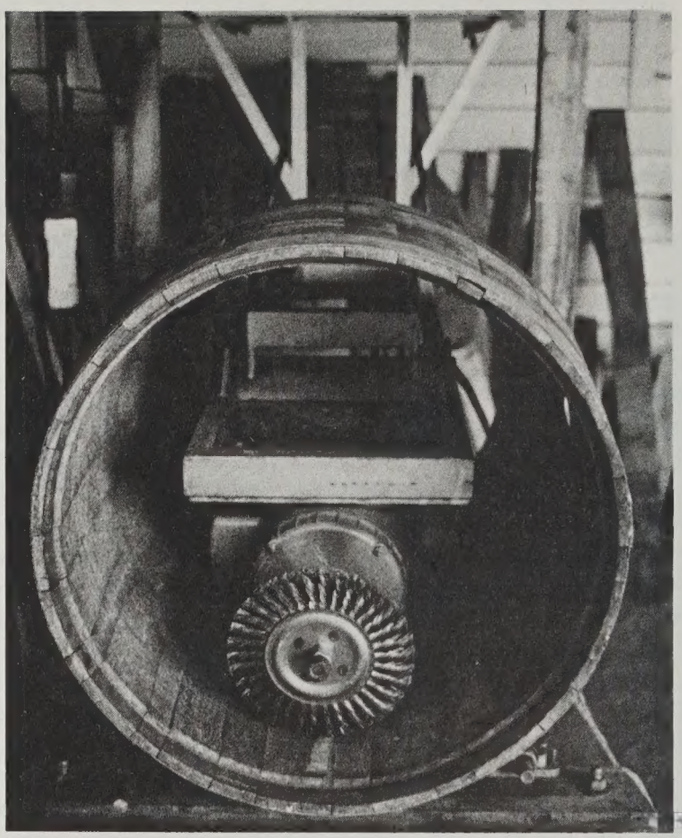
If the winery does not pick up the barrels the following day after shaving, the barrels are sulphured in a manner suitable to the winemaker.

DeBella recommends the following barrel care: "Put water, sodium bisulphate, and two percent citric acid in the barrel and leave bunged and rinse before putting in wine. It is the best way, but citric does take a little out of the wood.

"The next best method which leaches the barrel less,



ROUTER at work inside barrel.



UNSHAVED BARREL is positioned in jig for wire brush at Custom Cooperage.

is to put 1½ gallons of the same mixture in a bunged barrel and turn the barrel head to head once a week.

"We try not to take out too much wood, our process leaves a semi-rough surface, allowing wine to penetrate wood faster, to get better ageing," adds DeBella.

Heavier red wines produce more tartar buildup. A heavy tartar buildup must be damp, or the dry tartar will dull the cutter blades.

DeBella has seen many barrels go dry six months after a sulphur stick was burned. "Sulphur is a two-week to one month solution. The barrel must go into wine or a water solution, especially in hot weather," notes DeBella.

Used whiskey and brandy barrels are available from DeBella. Most winemakers have DeBella shave them, which removes 80-90% of the flavor. DeBella then gives the following recommendations:

For Zinfandel or Burgundy production: fill with fresh warm water for two days, drain and put in wine. For Pinot Noir: fresh warm water and one pound of baking soda for two days, check smell, and drain or go two more days if necessary.

Heavy Cabernets can go directly into the barrels or ½-1 pound of baking soda and fresh warm water for two days should prepare the barrel.

Whiskey barrels are recommended for white wines, as brandy has a sweet character. For Chablis production: put 1-1½ pounds of soda ash, 1-1½ citric with warm water for four days.

For Chardonnay production: use the same solution for one week. If there is any hint of smell, soak for another week with water and one pound of baking soda, which should leave the barrel smelling like oak.

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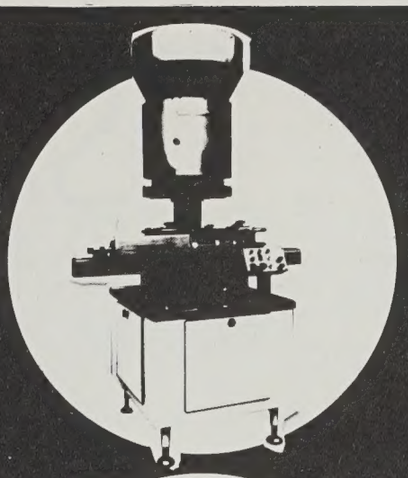

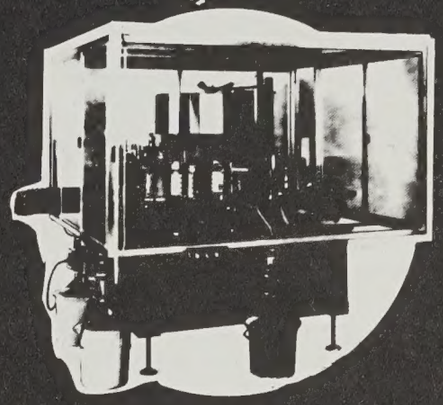

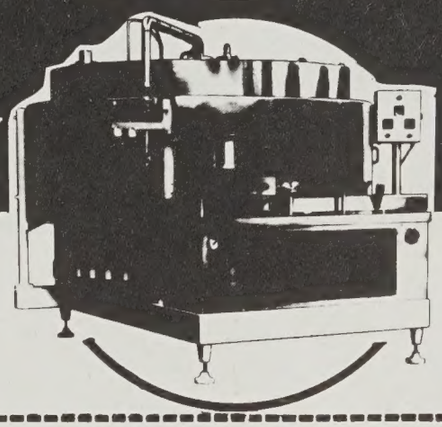

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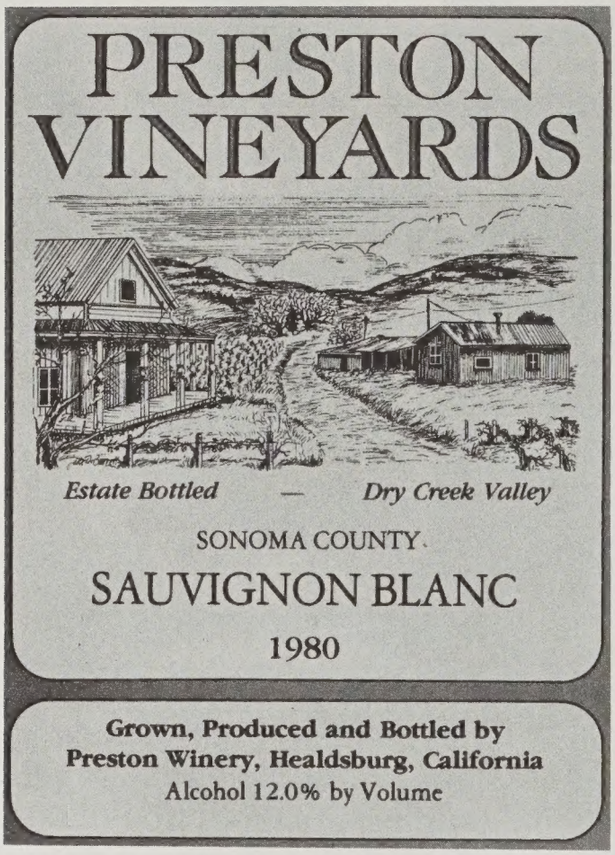
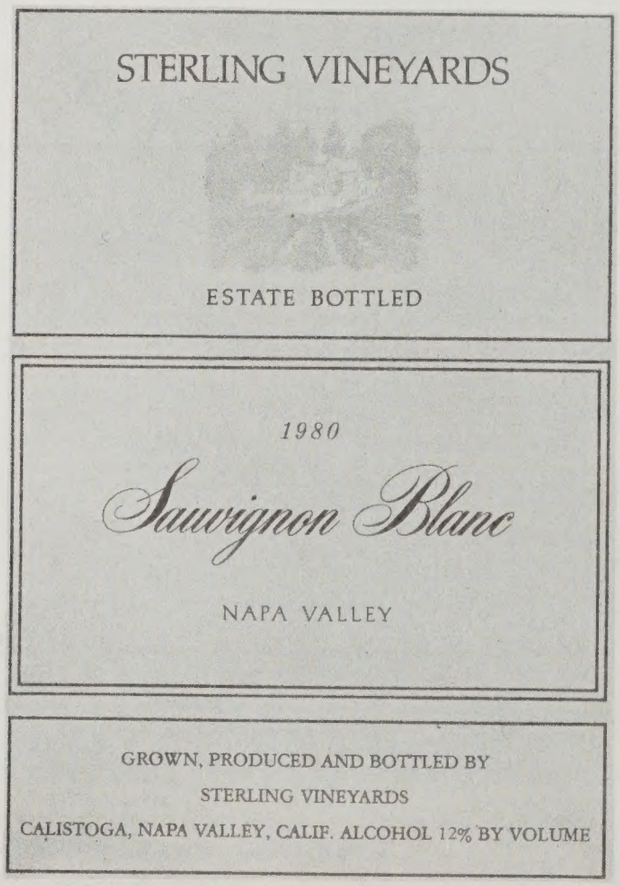
SAUVIGNON BLANC





Sauvignon Blanc is a relatively new and unfamiliar variety to many winemakers. How do the grapes grown in different areas of California and Oregon/Washington, dictate different winemaking techniques, which result in different styles?

I asked nine winemakers from throughout California and one in Oregon, with several harvests of the grape behind them, for their approaches: Steve O'Donnell of Callaway in Temecula, Riverside County; Rich Longoria of J. Carey Cellars, who works with Santa Maria Valley grapes; David Stare of Dry Creek Vineyard, Sonoma County; Cary Gott of Montevina in Amador County; Craig Williams of Joseph Phelps Vineyards in Napa Valley; Louis Preston of Preston Vineyards in Sonoma County; Bob McRitchie of Sokol Blosser in Oregon, who works with Washington state grapes; David Spaulding of Stonegate in Napa Valley; Bill Dyer of Sterling Vineyards in Napa Valley; and Ken Wright of Ventana Vineyards in Monterey County.

What criteria do these winemakers use in analyzing the vineyard and determining the time of harvest?

Sterling picks from three up-valley vineyards near the winery at Calistoga and one vineyard in Rutherford. More grassy character comes from Rutherford grapes picked two-three weeks later than up-valley grapes. Calistoga grapes which deliver more floral character are picked on the low end near 21.0 Brix while Rutherford is picked around 22 Brix. Acids will be .8-1.0 and pH between 3.1-3.2.

A long, cool growing season is preferred at Sterling. Average cropload of the vineyards is four-five tons/acre. A hillside vineyard near the winery will begin producing in '82 or '83, according to Dyer.

Semillon has been added at Sterling since '77 from two vineyards near the winery. They are harvested at about 22 Brix with a pH average of 3.5 and average acid of .60. In '79, less than 10% Semillon was added, 22% in '80 and 25% in '81.

Semillon, which has a fig-like character, is blended to help tone down the aggressive, grassy character of the Sauvignon Blanc grape. Sterling's model is the Graves style typified by Chateau Carbonnieux, with a hint of pungent grassy character and a target of 12.5% alcohol.

Ten Winemakers Explain Their Style

by DON NEEL

Joseph Phelps Vineyards has produced Sauvignon Blanc since '74 using primarily grapes grown on the Phelps ranch around the winery. One valley floor vineyard in Sonoma produces a blending component of well balanced, very grassy character which adds to the nose and varietal aroma of the finished wine, according to Williams.

Phelps plantings are pruned to an average of four canes with a high of six. The Sonoma vineyard produces three-four tons/acre. Within the Phelps ranch, there is a clay sector delivering lots of grassy character and a sandier, loamier soil which produces less grassy character. Eight more acres on the hillside behind the winery will be producing grapes of reduced grassy character soon.

Williams says, "A warm spring will create a tendency to shatter on the ranch's vines, if it is hot during the two week set period." One effort to reduce the shatter possibility, is the practice of "throttling" the vines.

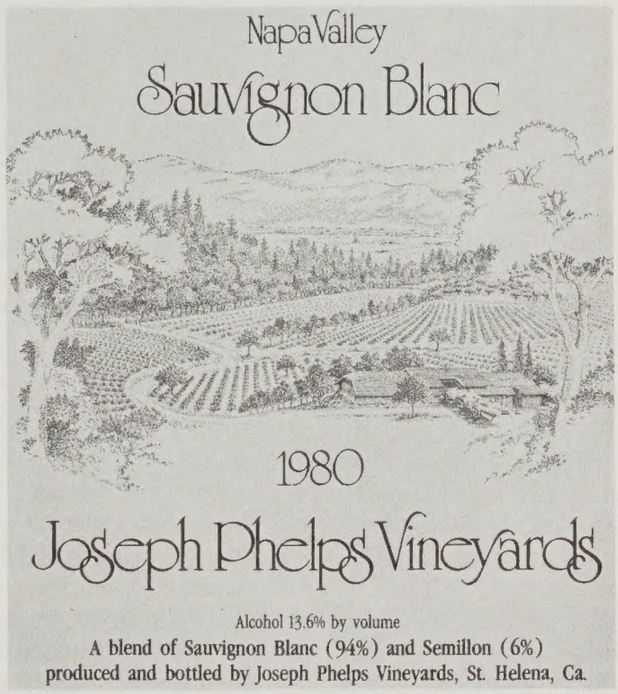
Williams adds, "pH is the primary criteria for picking, as that measures the stress the grapes have received. pH level is critical to achieving longevity in the wine, structure for laying down and ability to be drunk early." pH should be between 3.3-3.5. Brix will average 22.5, as high sugar does not equate with flavor, according to Williams.

Since '78, Phelps has added 5-15% Semillon which gives body to the wine, a "richness," lengthens the flavor and taste, according to Williams. Target harvest criteria on the Phelps ranch is 22-22.5 Brix, with pH being between 3.3-3.5 and the acid between .55-.70. Riverbed vines on the Phelps ranch have a higher pH and lower acid than hillside vines.

Phelps winemakers prefer a warm-hot growing season for Sauvignon Blanc on their ranch which is considered warm region 2, low region 3. Ranch vineyards are irrigated to provide necessary water. The goal at Phelps is a wine with 12.5-13.0 alcohol.

Stonegate has experimented with different pruning and resultant croploads since 1973 ranging from three tons/acre in '75 to six tons/acre in '78. They have settled on bilateral cordon pruning which produces four to four and one-half tons/acre.

"Locale is a big factor in herbaceousness in the grape. A cool growing season will also emphasize herbaceousness. If you harvest at low sugar, there is more tendency to herbaceousness. I want mature, healthy grapes just before the mythical 'peak of perfection'!" says Spaulding.


Napa Valley
Sauvignon Blanc
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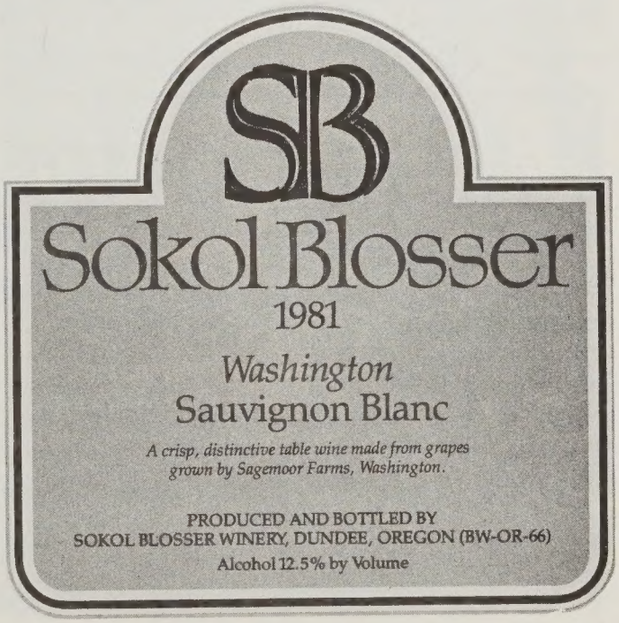
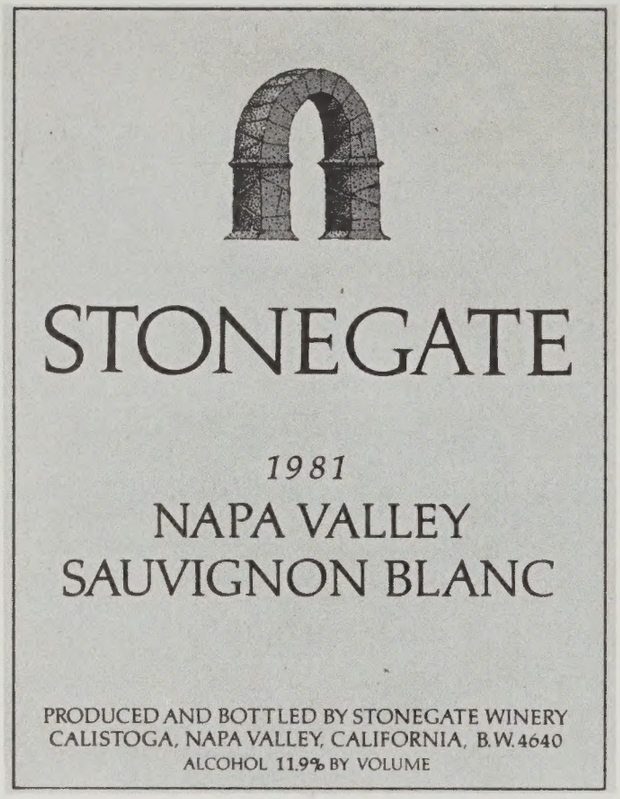
Joseph Phelps Vineyards
Alcohol 13.6% by volume
A blend of Sauvignon Blanc (94%) and Semillon (6%)
produced and bottled by Joseph Phelps Vineyards, St. Helena, Ca.

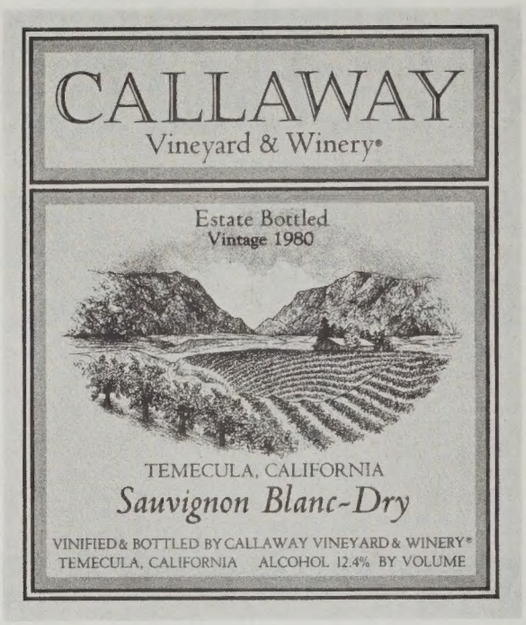




In 1981, Stonegate made 2000 cases from the Napa Valley, including grapes from the Stonegate Vineyard and an Oakville vineyard and 7% Semillon to achieve a dry, flinty style. Stonegate's primary harvest criteria is sugar between 22-23.5 with pH at about 3.2 or lower.

Sokol Blosser uses grapes from Sagemoor Farms in Washington, as do several other Oregon wineries making Sauvignon Blanc. McRitchie likes to pick at about .80 acid or higher and gets a pH between 3.2-3.3. "In four years, our sugar has ranged from 21.0-23.8, and we get a high alcohol efficiency of .59-.60," says McRitchie.

In Amador County, Montevina has experienced 5-6% sunburn in the past. "We have changed vines from two-wire vertical trellis to three-wire T to prevent sunburn," says Gott. New additional acreage has been planted in the bilateral cordon pattern and the vines are strong enough to stand straight with a six and one-half ton/acre load. Previous plantings tended to lean over in the past with the cropload.



Montevina adds 50 pounds of nitrogen per acre yearly to the young, decomposed red granite soil. Based on the year's rainfall, irrigation will be done two or three times. Grapes have been picked with the most important criteria being Brix at about 23.5. Acid will be .80-.90 and pH 3.3-3.4.

In 1981, new young vines began producing which gave less herbal, grassy character and more floral and perfumey fruit character. Less oak ageing than in past years was given to complement the fruit character. "To maintain the fruitier style, we may have to pick our older vines at 22-22.5 instead of 23.5," says Gott.

At Ventana, Wright comments, "We hope to achieve an alcohol of 12.0-12.5% with our new clone Savagnin Musque, which is less grassy in character. With the present Sauvignon Blanc grapes that we purchase, the varietal intensity is too great below 23 Brix and therefore our alcohol level has been higher than I would personally prefer."

Wright hopes to pick the grapes with a pH of 3.2 or lower. Ventana has grafted 20 acres over to Savagnin Musque, due to produce in 1983.

"When Pierre Galet (probably the most reliable authority on grape ampelography today) was here, he found that

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what we had planted as the true Sauvignon Blanc of Bordeaux, was in fact, not the same. The true Sauvignon Blanc of Bordeaux is what we (in California) have been calling Savagnin Musque. This is an extremely recent enlightenment," adds Wright.

J. Carey Cellars has used Santa Maria Valley grapes in '80 and '81, and will continue with them, augmented by Santa Ynez Valley and Edna Valley grapes for more complexity. Santa Maria has a low rainfall of 15 average inches per year and the vines do not overcrop.

Longoria has a prejudice to the French style of Graves—dry, flinty, not too fruity. Santa Maria grapes, due to the climate which includes a cool spring, deliver very grassy character and herbaceousness. Older vineyards show less of those qualities and more water will bring out higher levels of these qualities. Longoria likes to pick at an average ideal balance of 22.5 Brix, 1.1 acid and a pH of 3.0-3.1.

Preston vines are pruned to four canes with 12 buds each and the vineyard yields five to five and one-half tons/acre. The vineyard is well drained rich loam with creekside soils on top of a gravelly bed. Massive foliage makes the grapes hard to pick, notes Preston. "If you crop Sauvignon Blanc too light, the blossoms have a tendency to shatter.

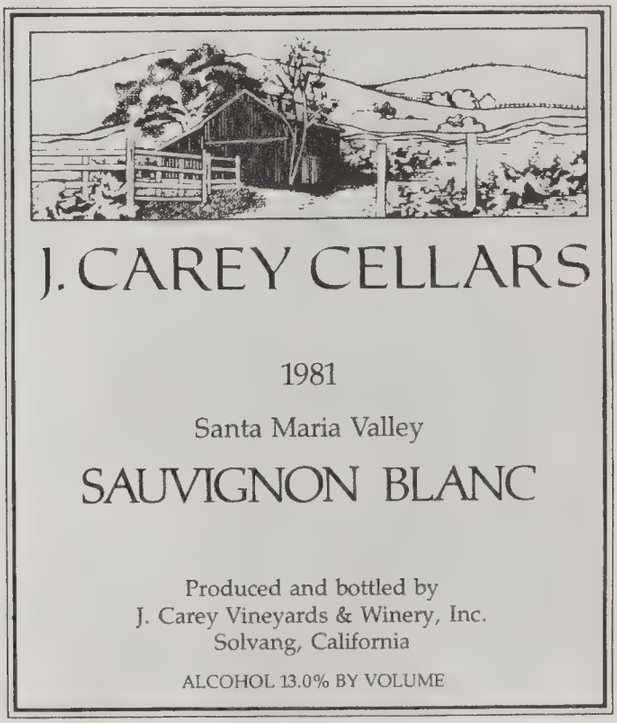
"I would like higher acids than .8-.85, but because of our warm area, the acid doesn't go any higher. I would like a lower pH than the 3.3-3.4 that the vineyard delivers. My target Brix is 22-22.5 and we actually pick from 21 to 23.5 during a harvest. When it is time to pick, you notice

'When the pH level of the juice makes a noticeable jump during pressing, the remaining juice is kept separate.'

—Bill Dyer

'We have changed vines from two-wire vertical trellis to three-wire T to prevent sunburn.'

—Cary Gott



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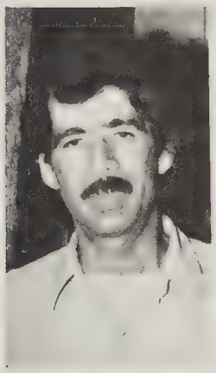
a color change from green to a yellow caste, flavor begins to taste like apricot or muscat and there is less grassy character," says Preston.

At Dry Creek, five to five and one-half tons/acre production comes off vines which are half cane pruned, and one-half cordon-pruned which have been found to be easier to work with, viticulturally. "I would like to get the acid as high as possible with a target Brix between 22-23, and a pH between 3.2 and 3.3," says Stare.

Callaway prunes each vine to what it can optimally handle—three, five, or two canes, etc. The vineyard tended by drip and overhead irrigation produces a cropload of four tons/acre during a long growing season. Sugar, acid and pH measurements are taken every three days from three-four weeks prior to expected harvest. O'Donnell stresses pH as the most important factor. The harvest target is a pH of 3.3, Brix will be between 22.5-23.5 and acid about .80.



'We harvest with low sugar and do not need skin contact time.'

—Rich Longoria

How do the winemakers crush the fruit and do they give skin contact time? What is their choice of yeast for barrel or tank fermentation at what temperature for how long? Are free run and press kept together or separate in vinification?

At Stonegate, sulphur addition at crush will range from 50-100 ppm depending on the fruit's condition. No skin contact is given and the juice is settled for 24 hours and racked off before inoculation with freeze-dried Champagne yeast. Spaulding has experimented with Montrachet and is considering experimenting with Steinberg in '82.

"I use temperature to influence fermentation in tanks to achieve varietal character and a certain amount of fruit, complexity and finesse. A temperature between 55-60° allows me to drop one-two Brix a day during a two-three week fermentation. I have experimented with 60 gallon barrel fermentation, but tasting the wine a year later did not justify it," says Spaulding.

About 80 ppm sulphur is added at crush at Phelps before a six hour skin contact period. Free run and press juice are centrifuged together to 2% solids for inoculation with Champagne yeast. Tank fermentation at about 60° takes about one and one-half weeks.

Sterling adds about 50 ppm sulphur at crush and presses immediately to retain just a hint of pungent, grassiness. A Willmes tank press is used to deliver good, clean juice at 120-140 gallons yield per ton. Samples of each press cycle are checked for the level of acid and pH. "When the pH level of the juice makes a noticeable jump during pressing, the remaining juice is kept separate," says Dyer.

Montrachet yeast has been used at Sterling with a reliability of having caused minimal problems with stuck fermentation in the past. Tank fermenting is usually done at about 65°. In '81, with the short season, fermentation at 60° took 14-21 days to retain fruit character.

"At about eight Brix during fermentation, we add one-two pounds of bentonite to promote rapid and good settling and reduce the total amount of bentonite we have to add to the wine later to achieve protein stability," says Dyer.

Depending on the fruit, Sokol Blosser has added 50-75 ppm sulphur at crush. To date, grapes have been pressed immediately with no skin contact time given. Juice is settled for 24-36 hours, racked and inoculated with Champagne 505 yeast.

'Tartrate removal is done with the rapid contact process.'

—Bob McRitchie

McRitchie likes Champagne yeast because it gives nice, clean fermentation, compacting nicely at the tank bottom and reduces the possibility of H_2S. Tank fermentation at 50-55° takes three-four weeks. "I tried a small lot of barrel fermentation in '81 and I liked the roundness and fullness—more dimension," says McRitchie.

'We do no skin contact, as total phenolics in Sauvignon Blanc are so high.'

—Steve O'Donnell

At Montevina, about 80 ppm sulphur is added at crush, followed by overnight skin contact at 60°. Fermentation in tanks at 55-60° with Montrachet yeast takes about three weeks.

No skin contact is given at Ventana, as the varietal intensity is quite enough, according to Wright. Wright has found a yeast strain which helps cut down the varietal character. "I like to barrel ferment if we have the space

or a fairly warm tank fermentation at 65-70° over two to two and one-half weeks," says Wright. Recently, fermentation has been 50-50 between barrels and tank.

35-50 ppm sulphur is added at crush at J. Carey. "We harvest with low sugar and do not need skin contact time," says Longoria. The juice is chilled to 50°, tank fermentation begins, and at 10-15 Brix, the juice is moved to 60 gallon Nevers barrels to complete fermentation. Champagne 595 and Bordeaux white yeast have been experimented with.

Preston has used 80-100 ppm sulphur at crush, but wants to experiment with less sulphur in '82 as he feels too much SO_2 may increase the phenol level. Skin contact occurs about three-four hours at 55°. Champagne yeast which has been problem free is added to free run and press juice together.

Preston puts the first lots picked, which have lower sugar and high acid, about 40% of the total lot, into new and old 60 gallon Limousin barrels for about a ten day fermentation. The remaining juice is tank-fermented at 55-60° for as long as three weeks. "Barrel fermentation cuts down grassiness," says Preston.

Sulphur addition at Dry Creek will vary from 50 ppm on sound grapes to 75-100 ppm on moldy grapes, with 65-85 ppm being the average. Beginning with the '77 crush, the juice has been centrifuged to 1½ to 2% solids after pressing. In 1978, experimentation with skin contact between 55-60° began. In '80 one-half of the grapes received five-six hours. In '81, almost the entire amount saw five-six hours, and the plan is the same for 1982.

Stare chooses Champagne yeast to reduce the possibility of H_2S which is more probable with Montrachet yeast. Tank fermentation at 55-60° takes two-three weeks. "Fermentation at 55-60° produces more complexity than 50° which delivers a fruitier style," says Stare. Free run and press are vinified together.

"We do no skin contact at Callaway as total phenolics in Sauvignon Blanc are so high," explains O'Donnell. 50-70 ppm sulphur is added at crush. Champagne yeast is used for long cool fermentation at low cell population levels. Tank fermentation at 50-55° takes three-eight weeks. Free run and press are kept separate, press is fined to remove tannins and used on the average of one in three vintages.

Will the winemaker add acid? What choice of acid might be used at what step of vinification?

Acid addition at Phelps is the exception, however, tartaric has been added at crush to compensate for grape deficiency. "Acid addition has helped remove calcium and potassium ions, and shift the pH down, making the wine more stable," says Williams.

'If you crop Sauvignon Blanc too light, the blossoms have a tendency to shatter.'
—Louis Preston

Acid addition may occur before fermentation to make up for a grape deficiency to about .95 at Ventana with any of three acids or a combination. Wright does not add acid after fermentation because that addition would leave a harshness in the wine that is not satisfactory.

Acid addition has never been necessary at Stonegate, Sokol Blosser, J. Carey Cellars and Montevina.

How do the winemakers prepare and age the wine in what choice of cooperage? None of these winemakers allowed malolactic fermentation.

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After fermentation at Sterling, the wine is racked off the gross lees, settled and racked one or two more times. The bench heat stability test is done, and the remaining necessary bentonite is added which usually is a total of three-four pounds with five pounds being a high figure, including the addition during fermentation.

After settling, the wine is racked off, and grape tannin and isinglass are added. Blending of the tank lots is done after settling and racking off of the previous addition.

Sterling puts about half the wine into 60 gallon lightly charred barrels from Taransaud and Demptos an average of four months. The balance sees 3000 gallon French oak uprights for about the same time.

Upon completion of fermentation at Phelps, the wine is racked off the gross lees and bentonite between two-four pounds added (according to fining trials). The wine is settled and filtered and the pH and bitartrate level will determine if cold stabilization is done. If so, the wine would be held at 30° for a week.

Phelps' wine goes into oak ovals in sizes between 1000-3000 gallons for three-four months. "We use ovals to maintain fruit and crispness in the wine. We want it to be different in style than Chardonnay. We discontinued barrel ageing in 1978, to modify our style by getting away from wood and oxidation character of small barrels," says Williams.

Stonegate adds 40 ppm SO_2 immediately after fermentation, and then makes the wine heat stable, cold stabilizes and polish filters before ageing. Spaulding's favorite wood is Troncais from Francois Freres and Tonnellerie Ludonnaise. Depending on the vintage and varying age of 60 gallon barrels, the wine will be in wood from two-six months.

'Locale is a big factor in herbaceousness in the grape.'
—David Spaulding

Upon completion of fermentation at Sokol Blosser, the wine is racked off and receives a coarse DE filtration through a pressure leaf filter and the SO_2 is adjusted to 20-25 ppm free. The wine is aged in 2200 gallon German oak ovals for two-three months.

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Montevina has centrifuged the wine after fermentation before going to new and used American and French Oak puncheons for about three months. Montevina will replace their Vaslin press this year with a Willmes tank press and may not centrifuge after skin contact in the future. American puncheons come from Nadalie and French puncheons come from a variety of coopers. Montevina tried Yugoslavian oak and did not find the results satisfactory.

Wright believes the wine needs a strongly flavored barrel, so uses 60 gallon French Limousin barrels along with used American whiskey barrels to give balance to the wine.

'Fermentation at 55-60° produces more complexity than 50°.'

—Dave Stare

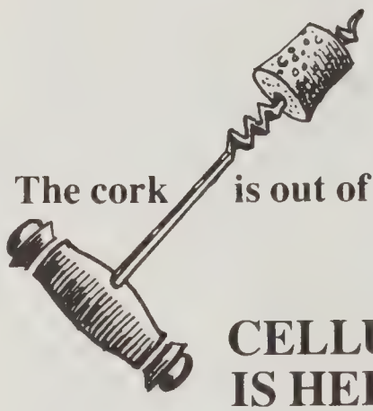
"Ideally if I could, I would keep the wine in barrels longer than the average of six months to diminish the varietal character further," says Wright. Due to early release, the wine is cold stabilized to help reduce the potassium acid tartrate.

Wood ageing at J. Carey Cellars is divided between barrels and 1000 gallon French oak ovals to balance the amount of oak. Some 135 gallon puncheons will be used in '82. Wood ageing averages about three months.

After fermentation at Dry Creek, the wine is settled for two weeks and racked off to barrels. Stare has experimented with a second centrifugation at this step with no negative effects. A variety of French oak 60 gallon barrels age the wine for five to five and one-half months.

Preston performs a bench test after fermentation and six-nine pounds of bentonite will be added. Preston checks the bitterness of the wine and has added gelatin to soften the wine, dosing two-four ounces per 1000 gallons, which helps drop the bentonite during a two week settling. Cold stabilization at 26-28° takes about two weeks. The wine receives coarse filtration off the bentonite/gel/tartrate lees. All the wine receives time in Limousin barrels.

Callaway adds three pounds of bentonite at time of fermentation and cold stabilizes the wine at 28° for three weeks. O'Donnell's Fume Blanc sees 60 gallon German oak barrels for four-five months, while Sauvignon Blanc ages for two-three months in 300 gallon German oak casks.



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'pH is the primary criteria for picking, as that measures the stress the grapes have received.'

—Craig Williams

How does the winemaker finish the wine, how much bottle age would he like to give the wine and when would he optimally like to drink it?

At Phelps, oak oval batches are blended and the wine receives polish filtration and is bottled with 30 ppm free SO_2. The wine which has a long finish due to extract from the Phelps ranch grapes begins to taste at its best six months after bottling. The wine tends to improve for two years or so after that, adds Williams.

Spaulding notes the correlation between SO_2 at bottling and intended release date. For near release, he would bottle the wine at 20-25 ppm free, or 30 ppm if the wine could be bottle aged for one year. Spaulding believes that bottle bouquet develops for at least a year and then the wine could be opened and that the wine has a five-eight year potential.

Cold stabilization at Sterling is done at 30° for about ten days and the wine is agitated during that time. The wine is polish filtered and bottled with 20-30 ppm free sulphur depending on pH level of the wine. Dyer believes the wine shows well after six months in the bottle and two-three years bottle age continues to improve the wine.

After wood ageing the wine at Sokol Blosser, one-four pounds of bentonite is added and the wine is settled and put through a tight DE filtration in the pressure leaf filter. "Tartrate removal is done with the rapid contact process. The wine is chilled to 30°, seeded with a concentration of cream of tartar, agitated for two-three hours, settled overnight and finally filtered through the pressure leaf filter," explained McRitchie.

McRitchie does an EK filtration prior to bottling with 30-35 ppm free SO_2. McRitchie suggests opening the wine six months to one year after bottling as the wine seems to mature in the bottle. "We make a clean, fresh style, less opulent, than some, with 12-12.5 alcohol and acid about .80. It is a fascinating grape, a great companion to salmon," adds McRitchie.

'I like to barrel ferment if we have the space or a fairly warm tank fermentation at 65-70°.'

—Ken Wright

At J. Carey, bentonite is added to the wine in a range of five-ten pounds/1000 gallons. Gelatin in a dose of one ounce/1000 gallons has been added to take out some tannins and astringency. Cold stabilization at 30° takes 12-14 days. The wine goes through a medium grade pad filter and sees EK filtration before bottling. A membrane may be used depending on the microbiological instability of the wine.

Longoria bottles with 30-35 ppm free SO_2. Longoria recommends at least nine months bottle age and has seen development to a plateau of six-nine months more.

Preston gives the wine EK filtration and puts the wine through a millipore prior to bottling with 25-28 ppm free SO_2. Preston suggests the wine probably shows best one to one and one-half years after bottling.

After barrel ageing at Dry Creek, the wine will be dosed with bentonite which has ranged from zero to eight or nine pounds/1000 gallons in the past. Cold stabilization for 10 days at 30° is followed by racking the wine off the bentonite lees. A rough filtration is done one-two weeks before bottling. The wine sees super EK filtration and the millipore enroute to the filler where bottling occurs with 30-35 ppm free SO_2. The millipore's function is to remove any possible malolactic bacteria.

Stare has seen the wine continue to mature and improve after several months of bottle age and under proper storage, his '72 is still good. Stare calls his style middle of the road, but tending toward being assertive and grassy.

Since 1980, Ventana has added 10-15% Semillon to add a different dimension, making the wine more complex, due to the very grassy character of Semillon. Wright would like to have one and one-half years of bottle age after bottling. "The wine is so forward in the first few years, it definitely benefits from bottle age. I think you will appreciate the elegance after three-four years," adds Wright.

After barrel ageing at Montevina, the wine receives about three pounds/1000 gallons of bentonite and a day later about one pound/1000 gallons of Sparkaloid and the wine is allowed to settle for a couple of weeks. Cold stabilization is done at about 28° for two weeks, and then the wine goes through a DE pad filtration.

Montevina's wine goes through a millipore enroute to the filler. "Our wine shows well from one-four years after bottling, showing a banana quality, the style is rich with no vegetable character. The wine at 13-14 alcohol is soft and fruity also showing a pineapple character," adds Gott.

Callaway's wine is fined with Hausenblase (Isinglass) and DE filtered. Prior to bottling, an EK filtration is done and the wine is membrane filtered enroute to the bottle. Bottling occurs with 20-30 ppm free SO_2. O'Donnell desires a minimum of three months bottle age and sees a plateau for the wines at two-three years after release.

INSULATED TANKS: How Do They Pay Off?

How do you fight escalating energy costs in wine production today?

Wineries are combating the problem with insulation of refrigerated tanks. Not only has winery after winery held down the cost of energy, but maximized the use of their refrigeration equipment.

At Domaine Chandon, Yountville, Ca.; 14,000 gallon tanks are receiving spray foam insulation as the production schedule allows to reduce the energy cost by a factor of seven according to Gino Zepponi. The saving was computed after a four month monitoring of energy needed to hold wine at 47° in insulated and uninsulated tanks.

After fermentation, racking and filtering at Domaine Chandon, the wine is chilled to 47° and held until the wine is bottled an average of two months later. Bottling begins in January and is finished by July.

Because of sprayed foam insulation on tanks at Sutter Home, Bob Trinchero, winemaker, needs only one 20 ton refrigeration unit to cold stabilize 65,000 gallons of wine at one time. Four inch spray foam on two tanks totalling 200,000 gallons outside the St. Helena, Ca. winery allows one 35 ton refrigeration unit to maintain a temperature of 48-50° during the three-four week fermentation.

Montevina, Plymouth, Ca.; processed 700 tons in 1981 with two refrigeration units totalling 50 tons. To handle a shift in white wine production in 1982 from 80 to 250 tons, Montevina has added spray foam insulation on tanks costing $12,000 instead of spending $40,000-50,000 for additional refrigeration equipment.

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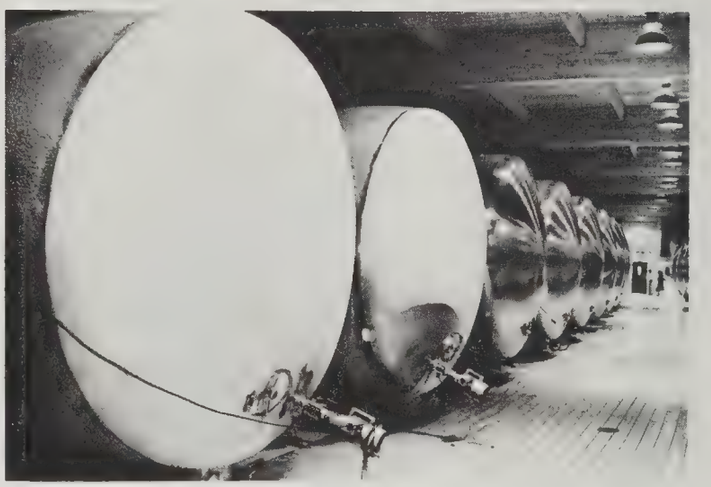


SPRAY FOAMED TANKS at Domaine Chandon and unfoamed tanks scheduled for insulation.

Veedercrest, Emeryville, Ca.; has applied Ethafoam (sheets of expanded polyethylene closed cell foam) to their tanks, so that one ten ton refrigeration unit could hold 32,000 gallons during fermentation at required temperatures between 40° and 60°. The same system has held 20,000 gallons at 25°-30° for cold stabilization.

Ethafoam is also used by Bob Porter at Scharfenberger Cellars in Ukiah, Ca.

Armaflex foam sheets made by Armstrong Rubber are in use at Preston Vineyards, Healdsburg, Ca. and Matanzas Creek, Santa Rosa, Ca.

Santino Winery has one seven-and-one-half ton refrigeration unit to control 15,000 gallons in spray foamed tanks outside. The Plymouth, Ca. winery will add 20,000 gallons of insulated tank space this year without adding to the refrigeration system.

Dry Creek Vineyard, Healdsburg, Ca.; has 20 jacketed tanks that are insulated and three uninsulated tanks. "The three require more energy than the other 20 combined," says Dave Stare. An energy audit has shown Stare a significant energy loss from uninsulated glycol lines, which he hopes to have insulated soon.

Other wineries who have added sprayed foam to tanks to maximize their refrigeration equipment and hold down energy costs include: R & J Cook, Clarksburg, Ca.; Turgeon & Lohr, San Jose, Ca.; Beaulieu Vineyard, Rutherford, Ca.; Hacienda Wine Cellars, Sonoma; Iron Horse Vineyards, Sebastopol, Ca.; Foppiano Wine Co., Healdsburg, Ca.; Stevenot Winery, Murphys, Ca.; ZD Wines, Napa, Ca.; and Baldinelli Shenandoah Valley Vineyards, Plymouth, Ca.

Spray foam contractors will point out, however, that cost and type of foam and coating applied will vary in each individual winery situation.

Phillip Muller from the Energy Utilization Dept. of Pacific Gas and Electric, who has done several energy audits of wineries located in northern California, gave PW a mathematical model of energy savings by insulating a 3000 gallon tank located outside of a winery building in Healdsburg, Ca.

The tank, moderately sheltered from wind and sun, uses 25° glycol. It will be used for 55° fermentation in September and October, 60° storage in November and 30° cold stabilization in December and January, five months all total. The tank is 14 feet high, six feet in diameter and has a five foot high refrigeration jacket.

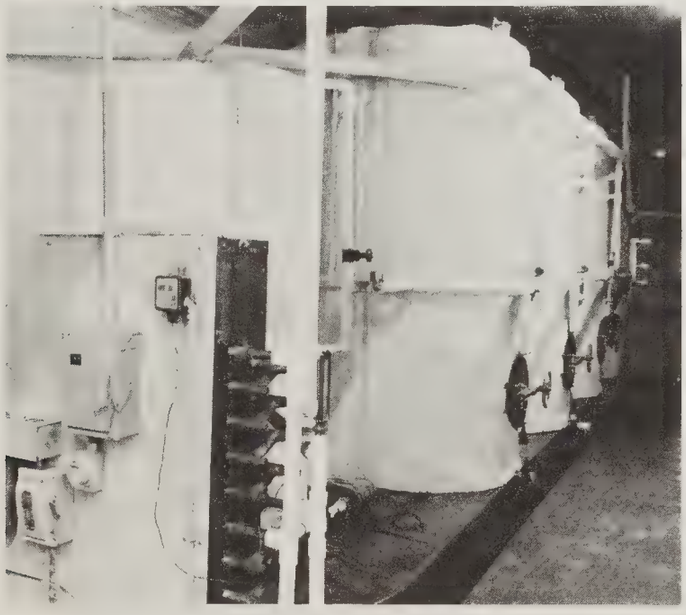
Comparison was done between no insulation; Armaflex with an R value of 1.5 at 3/8″ thickness; Ethafoam with an R value of 4.5 at 2″ thickness; and sprayed ureaformaldehyde foam with an R value of 7.5 at 1″ thickness.

Refrigeration equipment needed to operate with different insulation is: no-insulation, two tons; Armaflex covered, .58 tons; Ethafoam covered, .24 tons; and spray-foam coverage, .15 tons.

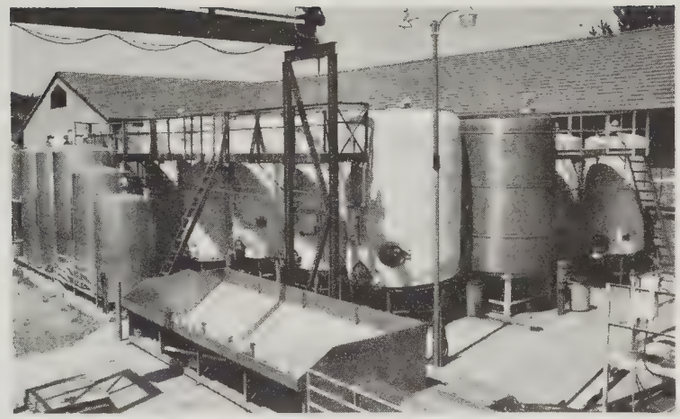
Energy costs computed at nine cents per kilowatt hour (KWH), for the five months would be: uninsulated tank 4800 KWH at a cost of $432; Armaflex on the jacket alone would need 2700 KWH and cost $290; Armaflex on the entire tank will use 1355 KWH and cost $156; complete Ethafoam covering will need 569 KWH and cost $93; spray foamed tank will require 338 KWH and cost $75.

The savings analysis on the above data is: Armaflex covered jacket will save $142 or 33%; total Armaflex will save $276 or 64%; Ethafoam will save $339 or 78%; and spray foam will save $357 or 83%.

Converting the data to gallons shows an uninsulated cost of processing to be 14 cents per gallon, Armaflexed jacket will be 9.6 cents, total Armaflex will be 5 cents, Ethafoam will be 3 cents, and sprayed foam will cost 2.5 cents per gallon.



THREE INCH FOAM covers all tanks inside Sutter Home.



DRY CREEK VINEYARD has 20 spray foamed fermenters.

Muller also calculated savings of different insulation materials on glycol lines of 4″ PVC pipe in the same winery location, for 12 months ignoring solar gain.

Uninsulated pipe would cost in energy, $2.37 per foot per year to maintain 25° glycol in the pipe. Armaflex would lower the cost by 46% to $1.27 per foot. Ethafoam insulation would lower the cost by 71% to 68 cents per foot. Spray foamed lines would cost 46 cents per foot, an 81% savings.

Armaflex is available in sheets 3′ by 4′ from Pameco Aire Company in California. Besides 3/8″ thick sheets, Armaflex comes in 1/2″ with R value of 1.976 and 3/4″ with R value of 2.964. An adhesive is necessary to apply the sheets to the tank. A finish coat is necessary on the outside to protect the material against ultraviolet deterioration. Prices quoted by Pameco Aire, Santa Rosa, Ca.; in April 1982 were: 3/8″—$1.27 per square foot, 1/2″—$1.37, and 3/4″—$2.12, in a carton of 12 sheets 3′ by 4′. Armaflex tape is recommended to seal gaps between sheets on the tank.

Ethafoam is available from Tharco Co. with offices in the 13 western states. The San Lorenzo, Ca. office quoted a cost of $50 each for a 4′ x 8′ sheet in April 1982. Contact cement must be applied to the tank and sheet in installation of Ethafoam.

Spray foam insulation is available from industrial insulation contractors listed in the phone book. ■

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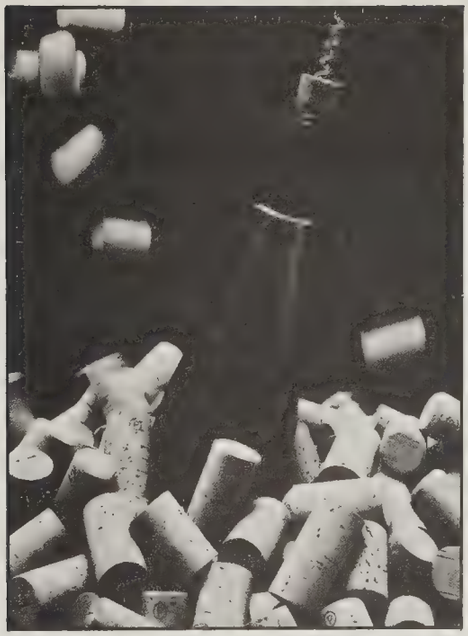

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and gold. Minimum purchase is one carton containing 2,500 capsules. Custom orders are available with a minimum of 20,000 units.

Custom orders can be manufactured in various sizes, colors and decorated to each customer's requirements with both top embossing and printing available. Delivery time for custom orders is approximately 12 weeks.

Aluminum Foil

Aluminum foil capsules, manufactured in Peoria, Ill.; are available in stock colors of white or gold and can be side-printed in minimum quantities of 20,000 units. The capsules can be applied by spinning or crimping. Special colors require a minimum of 300,000 units and 12 to 14 weeks delivery time.

Polylaminate Foil

Polylaminate foil capsules are available on special orders with a minimum order of 300,000 units. These capsules can be manufactured to meet the customer's choice of color and decoration and can be top embossed and/or printed.

Aluminum Champagne and Polylaminate Champagne

Aluminum champagne and polylaminate champagne capsules are available. The aluminum champagne capsule can be ordered in minimum quantities of 20,000 units in stock colors of white or gold and can be side printed. Polylaminate champagne capsules are special orders and can be produced to meet the customer's requirements.

Fleming & Potter also manufacture **aluminum foil pleated capsules** available in minimum quantities of 20,000 units.

On special order, water-activated adhesive on the inside of the capsules for better adherence to the bottle is available.

LATCHFORD PACKAGE COMPANY

Tin-lead, plastic push-on and PVC "heat shrink" capsules are available as stock items or can be handled as custom orders by either the San Francisco or Los Angeles office.

Tin-Lead

Latchford has represented the manufacturer-Betts and Co. for 30 years. Betts is the oldest manufacturer of tin-lead capsules in the world and the first to export this product to America, according to Curt Goodsill.

The Betts process continually casts virgin lead which is then fed into a three-stand high speed automatic rolling mill where tin is applied to both surfaces by pressure welding. This process guarantees the thickness consistency of the tin coating which serves to improve color adhesion and acts as a protective coating and insures consistent wall thicknesses of capsules.

Latchford attempts to maintain a minimum inventory level of 200,000 units of each of the following colors in the 43m length (to cover #9x1-3/4" corks) and 50mm length (designed to cover 2" corks). All stock capsules are compatible with 375ml and 750ml bottles.

Colors are cream, white, yellow, gold/bronze, silver/uncolored, pink, black, two shades of green and five shades of red.

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Minimum custom orders of 50,000 units are available for any color or size of tin-lead capsule needed. Minimum purchase from stock inventory is one case (approximately 2,000 pieces). Custom orders should specify equipment used at the winery to assure the best taper size. Lead time on repeat custom orders is three months and four months for a new order.

Custom printing is available on sides of the capsule walls by offset printing. Experience has shown that top printing becomes removed due to contact with the case during transit. Top embossing, the standard top decoration by Betts and Co., is available with or without distinctive color. Capsule tops can be supplied with or without top perforations. A minimum of one top hole is standard to let air escape during application.

Plastic Push-On

Plastic push-on capsules are made by Alcoa in one size, 28mm x 50mm in the following colors: white, cream, yellow, gold, black, pink, gold, and red (burgundy). Minimum purchase is one case—1100 units. Alcoa closures feature an outside pull tab for ease of removal.

Custom printing by silk screen is available on minimum orders of 50,000 pieces in custom colors. Lead time is approximately six weeks on repeat orders and eight weeks on new orders.

PVC "Heat Shrink"

PVC "heat shrink" capsules are available from stock in 55mm length for 750ml bottles or 60mm length for 1.50ml bottles. Stock colors are two shades each of red, green and gold. Minimum purchase is one case (approximately 5,000 pieces).

Custom orders for PVC capsules require lead times of six to eight weeks on repeat orders and 10 to 12 weeks on new orders.

Wineries considering PVC capsules should be aware that a heating apparatus is required for application. In addition to capsules with top discs made of various materials for various applications, Latchford accepts custom orders for PVC cut bands, as well as, open top "preform" bands widely used with an embossed bar-top cork or any application requiring a pilfer-proof secondary closure.

MACK-WAYNE CLOSURES

Mack-Wayne Closures Division of the West Co. specializes in plastic wine sleeves. Production is handled at the company's Montgomery, Pa. plant and also at its recently opened facility in Santa Rosa, CA.

Plastic Sleeve

At present the company offers plastic wine sleeves which are applied through a friction method to cork bottles and bottles using aluminum tamper-evident closures. These capsules are available for 750ml, 1.5 liter and magnum bottles.

Four sizes include S and M sleeves, C sleeves with A-tab and C sleeves with C-tab. Four standard colors are available: white, green, gold and burgundy. Custom color matching and silk screening are also available.

Minimum orders for stock items are one case lots (12,000 pieces) and on custom orders, 50,000 pieces. Delivery is three to six weeks on stock orders and six to nine weeks on custom.

According to John Martin of the closures division, Mack-Wayne will introduce three new products at the '82 ASE conference in Anaheim. They include a synthetic wine stopper, known as their Bouchon Tage; a B sleeve for bar tops and surly—a closure for straight corked wine bottles that takes the shape of the bottle neck without heat.

THE MOFFETT COMPANY, INC.

The Moffett Co. specializes in tinned lead capsules. Stock capsules are warehoused in San Jose and custom capsules are made in Europe to customer's specifications.

Tin-Lead

The Moffett Co. stock capsules are size 28.75mm diameter by 50mm length. This length gives good coverage of a 2 inch cork since the capsule elongates up to 10 percent during spinning-on. The stock capsules have a narrow 1:25 taper which gives a tight smooth fit on most 750ml bottles used in this country.

French bottles and magnums require larger sizes. Stock capsules have two vent holes, separation rings and a self-color, grape cluster topstamp at no extra charge.

The following colors are stocked: goldbronze, silver, red flor, bright red opaque, maroon opaque, white opaque,

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yellow opaque, yellow matte, dark green matte, light green matte and beige matte.

Custom capsules have special colors, topstamps and printing in up to four colors on one capsule. Moffett artists can design a capsule for the customer.

In ordering capsules, the winery should specify which bottles will be used and whether a straight wine cork or bar-top cork will be used. The specifications in a capsule order should include the top diameter, length, taper and color.

In addition, a winery can specify the number of vent holes, with a separation ring or without (a separation ring is a raised bead around the capsule skirt which allows easy separation of capsules from the stick). Embossed top stamp and printed decorations can be specified. It should also be specified if the capsules are to be put on by automatic application.

The tinned lead capsule is made by first blending the molten lead with small amounts of antimony and, at times, other metals for the best combination of maleability and strength.

Then the metal is formed into a ribbon and pure tin is applied to either side to enclose the lead compound. From here, the blanks for the capsules are punched out and then formed and stretched to their final form. Finally the capsules are painted and decorated.

The factory uses mechanized procedures to give consistent quality at production levels of over one million capsules per day.

RIEKES CONTAINER COMPANY

Capsules made in Spain by Ramondin and plastic push-on wine sleeves manufactured by the West Co. are available from Riekes, according to Mario Montagnoli, cork and capsule specialist.

Tin-Lead

An inventory of tin-lead capsules is maintained at the Emeryville facility. Stock colors are burgundy, white, green, silver and gold (which are overlacquered). Stock capsules have one hole and can be purchased in a one case minimum.

Custom orders of 50,000 minimum require 10 weeks or longer delivery depending on the capsule design. A 50,000 order may consist of order increments of different colors on the same order.

Custom orders can specify length and choose the proper diameter. Any color can be produced with none, one or more holes. Embossing on the top with a stock or custom dye is available at no extra cost.

However, embossed tin-lead capsules are not well suited to hand spinners, says Montagnoli. Printing or highlighting on the top and sides is available for an extra charge. The capsules, made by the multiple-draw process can come with an antilocking device at no extra charge in the form of buttons or a ring.

"We supply Ramondin with specifications on type of spinning equipment used by the customer and a bottle neck-print if necessary, to help them determine the proper amount of antimony in the capsule to guarantee the best rigidity and adaptability of capsule to bottle," says Montagnoli.

Push-On Plastic

West push-on plastic capsules are available with two choices of tear-off tab: C-tab or A-tab. The 29mm x 50mm stock capsule fits the 30A-3110 cork finished wine bottle. Stock colors are red, burgundy, white, black, gold, ivory and two shades of green. Minimum stock purchase is one case (1,200 units). Custom orders of 25,000 minimum require eight weeks delivery.

Riekes represents West capsules west of the Mississippi River in the United States.

PVC "Heat Shrink"

Custom orders only are accepted for PVC "heat shrink" capsules in a minimum of 100,000 with a 10 week delivery time. The capsule has an aluminum disk. It is available in any color, choice of printing and none or specified number of holes.

Celons

Cut-band seals in stock color of white packed in solution are available for the 38mm screwcap. The seal shrinks as it dries during application. Minimum stock purchase is one case (10,000 units). Custom orders of 100,000 minimum require 12 weeks delivery.

Polylaminated Aluminum

Custom orders only are accepted for polylaminated aluminum capsules. The capsules, a lamination of

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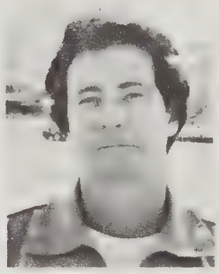

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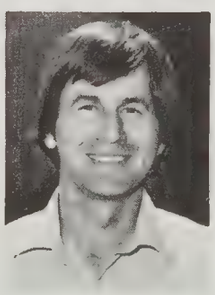

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polyethylene and aluminum, are available in choices of length, diameter, taper, color, printing and a minimum quantity of 50,000.

Champagne

Custom orders of **aluminum champagne** capsules are accepted and aluminum content can be specified at 20, 30 or 40 micros.

Custom orders for **tin-lead** champagne capsules are accepted.

SCOTT LABORATORIES

PVC "heat shrink," tin-lead, aluminum and polylaminated aluminum capsules are all available from Scott Laboratories.

PVC "Heat Shrink"

Scott offers three types of PVC heat shrink closures manufactured by AF Seal, Inc.: a cut-band which is used over a bar-top cork or screw cap; an open top preformed capsule for bar-tops of all shapes, as well as, screw caps and ROPP, and closed capsules for all applications with tops made of aluminum, paper or plastic.

PVC's great advantage, according to Bruce Scott, is its flexibility in color and sophistication in printing.

Stocks of PVC capsules in maroon, green and gold are maintained in the U.S. These are available in two sizes, one to fit standard 750ml bottles and the standard 1.5 liter bottles. Customers are requested to always confirm their bottle manufacturer and mold before ordering stock capsules.

Custom orders of PVC are accepted on a minimum of 100,000 units.

Tin-Lead

Scott carries eight colors of tin-lead capsules in stock: dark green, light matte green, yellow, white, maroon, metallic flor red, gold and silver. The last two are over-lacquered to prevent oxidation of the metallic elements. Stock capsules are available in increments of 2,500.

Custom tin-lead capsules are normally available in orders beginning at a minimum of 25,000. Orders take 12 weeks to process and ship but depending on prebooked orders, may not get production time for 10 to 12 weeks. Delivery will always be confirmed at time of order. Custom embossing and/or printing can be done on the top of tin-lead capsules.

Scott recommends that winemakers be very careful when ordering tin-lead capsules and specify the exact bottle neck size and shape. Also, it is important for Scott to know whether a semi-automatic horizontal spinner or fully automatic vertical spinner is being used.

Scott notes that tin-lead capsules vary slightly between manufacturers due to the proportion of antimony added to the capsule material as a hardening agent. Capsules with a greater proportion of antimony are easier to paint and are less susceptible to crushing in transit.

These "crisper" capsules are, unfortunately, more susceptible to wrinkling on certain spinners than capsules with less antimony. The antimony level will also be a factor affecting the capsule taper used by the manufacturer.

Tin-lead capsules are available (at customer option) with separation aids. These aids include: a wax paper separation between capsules; a top separation to prevent impacting; and a ring separation to prevent impacting. Wax paper separation is the rarest of these types of separation and the only one for which there is a charge.

The decision to use the other types of separation may be influenced by the following factors: placement of artwork on the capsule; taper desired for the capsule; and whether capsule dispensing will be manual or automatic. As a consequence of these factors there is no simple recommendation. All purchases are individual.

Scott tin-lead capsules are generally packed in boxes of 2,500 which are then placed in crates of 25,000. Separators are placed in every crate to prevent crushing of boxes. It is recommended that the capsules remain in the protective crates until shortly before use. As other capsule protection options, Scott also offers cardboard layer separators and wooden boxes at a slight upcharge.

There are three dimension specifications for tin-lead capsules: length, diameter and taper. Tin-lead capsules normally elongate about 10 percent during application.

Aluminum and Polylaminated Aluminum

Scott Laboratories also offers champagne capsules in aluminum and polylaminated aluminum. These are available in both one or two piece construction depending on customer need. These capsules are most commonly applied with a special crimping boot or pleater and crimping boots in combination.

Champagne capsules are also available from Scott in **PVC and lead.** All champagne capsule orders are custom.

2K PACKAGING ENTERPRISES INC.

Wine and champagne capsules made from tin-lead by Loos and Co. of West Germany are available, as well as, wine and champagne capsules made of aluminum or polylaminated aluminum and PVC heat shrink wine capsules made by Aluminiumwerk Tscheulin of West Germany.

Tin-Lead

Tin-lead capsules of 50mm length are stocked in the Beaverton, Ore. and Pacheco, Ca. plant in the following colors: green, burgundy, white and gold. The capsules made by the roll, cut and draw process have distance rings or anti-nesting rings as standard features.

Custom orders of 100,000 minimum tin-lead capsules

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require eight to ten weeks for delivery. An extra week is required for extensive artwork. Custom orders can come with zero, one or more holes, with at least one hole recommended by the manufacturer for aeration. Embossment in the same color is available at no extra charge. An upcharge is applied on embossments in different colors. Upcharges are applied for additional colors on the capsule.

On placing a custom order, Keith McCandless of 2K, asks for a bottle sample or previous capsule sample to assure identical fit. McCandless also notes that tin-lead colors may vary just slightly from paper colors.

Aluminum

Aluminum wine capsules are produced in a standard of 40 microns. Also available are capsules with .35 microns or 50 microns (heavy duty). Custom orders are in minimums of 100,000 per style and 200,000 per shipment. Smaller orders can be produced with five percent upcharges on short order by quantity of style or shipment.

Aluminum-Polylaminated Aluminum

Champagne capsules of either aluminum or polylaminated aluminum are available with no disk or an aluminum disk that can be printed in one to four colors.

PVC "Heat Shrink"

PVC heat shrink capsules are available from stock in red or gold at 60mm length. Custom orders of 100,000 per style and 200,000 by quantity require eight to ten weeks delivery. ■

PAST ISSUES

Practical Winery is based on useful articles and comment, it does not become useless as the calendar pages turn. We have the pleasure of offering the following back issues at a cost of $5 per copy.

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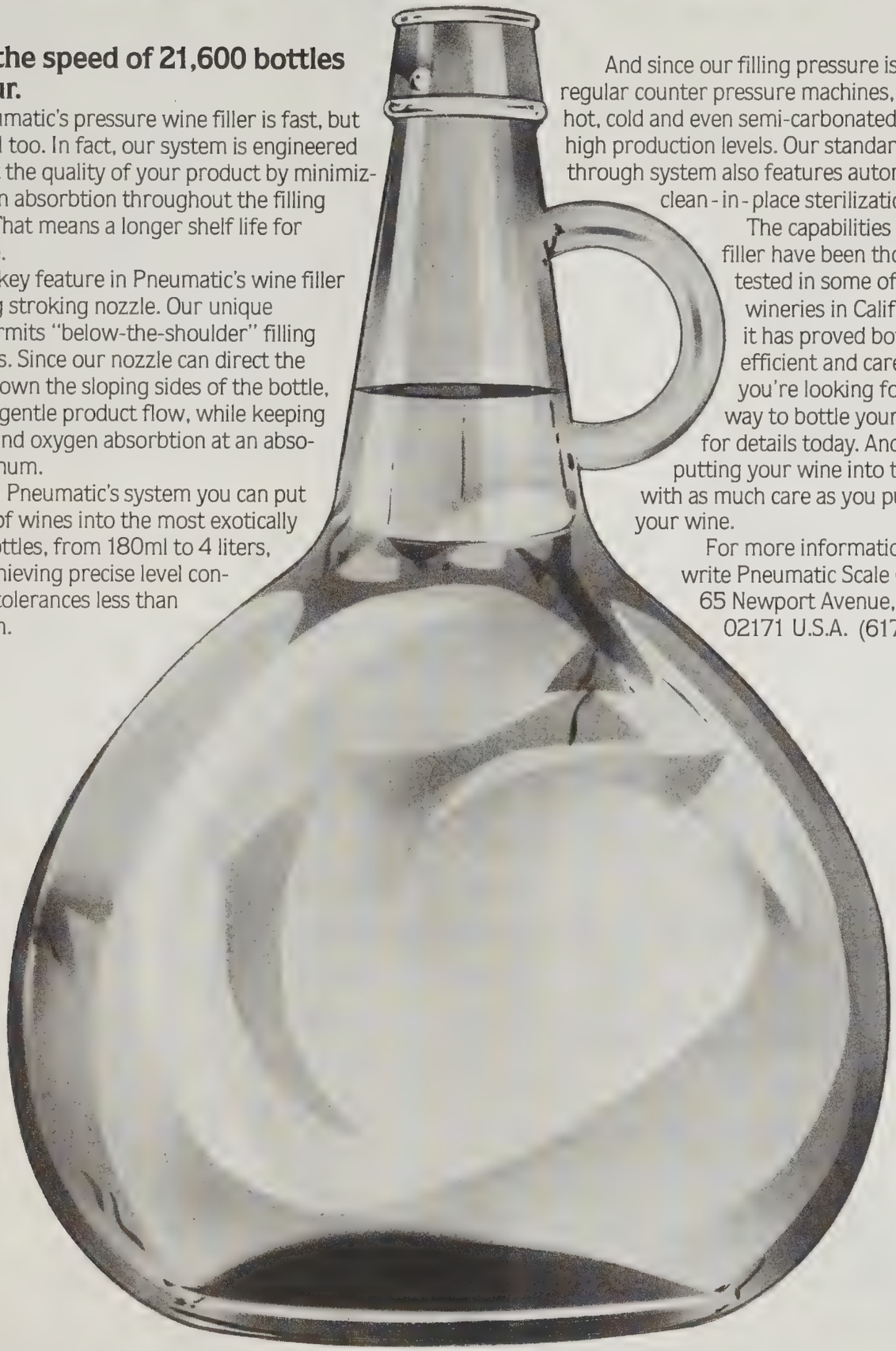

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Improvements in the design of lids and gaskets have made the variable capacity tank (VCT) with a pneumatic lid concept more and more popular.

Lids with slight conical design minimize the trapping of oxygen with the wine and eliminate the need to blanket with inert gas. A gasket (inflated by air or gas) on the perimeter of the lid holding the lid in position to the tank wall has been introduced to meet the requirements of the winemaking process.

The common feature utilized by several wineries is removing the lid and using the tank as an open fermenter for good access on red wine fermentation. The winery can place the lid in position to use the tank for white wine fermentation, storage, processing such as cold stabilization and bottling.

Practical Winery talked to at least seven winemakers who are using the design in all or some of their winery tanks.

Adler Fels in Santa Rosa, CA has five 2100 gallon units which are used as closed fermenters of Riesling, Chardonnay and Gewürztraminer giving the winemaker control over potential volatile acidity from insufficiently gassed headspace.

Adler Fels processes varietal-vineyard lots separately from three-five acre blocs which produce between seven-nine tons, depending on the year's growing season. Tanks are adjusted to the actual volume, eliminating the need for blanketing with inert gas.

Tops are removed at Adler Fels for fermentation of Cabernet Sauvignon, allowing complete access for punching down the cap, according to Dave Coleman, owner. After fermentation, the top is positioned to accommodate the reduced gallonage after pressing, and adjusted again to the wine after racking off lees.

Coleman utilizes the design as a bottling tank by deflating the gasket enough to allow the lid to float downward on top of the wine and adds CO_2 on top of the lid to insure that no oxygen reaches the wine.

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TUCKER CELLARS has three 1650 gallon VCTs.

Myron Redford at Amity Vineyards, Amity, Ore., has four variable capacity tanks. A 1650 gallon unit has the lid removed to serve as an open fermenter for Pinot Noir permitting punching down during fermentaion. A 2750 gallon unit holds eight tons of Pinot Nouveau for closed fermentation by carbonic maceration. The lid is removed for ventilation when the pomace is removed.

Amity tanks are used as closed white fermenters of Solstice Blanc, Gewürztraminer and Riesling. Storage and cold stabilization occurs in the tanks. Redford likes the pneumatic lids which are adjusted to the exact wine volume, reducing the possibility of volatile, acidity from insufficiently gassed tanks. "The design allows a small winery to work with larger lots than otherwise possible," adds Redford.

Cache Cellars of Davis, Ca. has one 2000 gallon variable capacity tank that allows Charles Lowe, winemaker, to ferment any gallonage of white wine with only six inches of head space. The tank lid is adjusted for various lots to perform as a storage tank or for processing such as cold stabilization.

Paul Draper of Ridge Vineyards in Cupertino, Ca. is using open top stainless steel tanks in a tilt-tank concept for red wine fermentation. Draper has six-six ton units with a slight cone on top, no manhole on the side and a grid inside to hold down a submerged cap during fermentation. The large opening on top gives access for pumping over. Upon completion of fermentation, when the wine is racked off, the grid is removed and the tank is tilted upside-down to pour pomace into the press.

Draper is planning to add more units of the same size without the cone on top, a pneumatic grid to hold the submerged cap and a pneumatic lid near the top to keep foreign material out during fermentation. After fermentation, a winery worker moves the tank with a pallet jack

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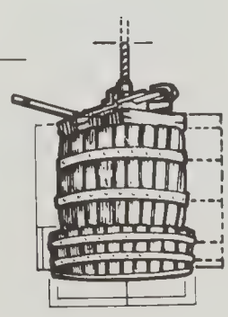

TWO VCTs are used for red fermentation at Ventana.

to the press pad for lifting and tilting of the tank to empty the pomace.

Scott Henry's Winery in Umpqua, Ore. has six variable capacity tanks. Three-1800 gallon units and three-2500 gallon units to allow for individual lot fermentation of Chardonnay (with lids on) or Pinot Noir (without lids to allow punching down). During racking, the tanks are adjusted to exact wine volumes.

Tucker Cellars in Sunnyside, Wash. has three 1650 gallon units in which the lids are adjusted for fermentation of about 1500 gallons each of Chenin Blanc, White Riesling and Johannisberg Riesling. The lids were moved to fit the reduced volume of wine after fermentation.

Ken Wright at Ventana Vineyards Winery in Soledad, Ca. has two-5000 gallon units, on which he removes the lids for complete access to pump over or punch down during red fermentation.

After fermentation at Ventana, the lids are positioned to the exact volume of wine, eliminating headspace and expense of argon gas to fill the headspace. The tanks are used for bottling, where the lid is lowered once a day, eliminating the guessing game of gas addition.

AMITY VINEYARDS has four VCTs for stainless steel cooperage.

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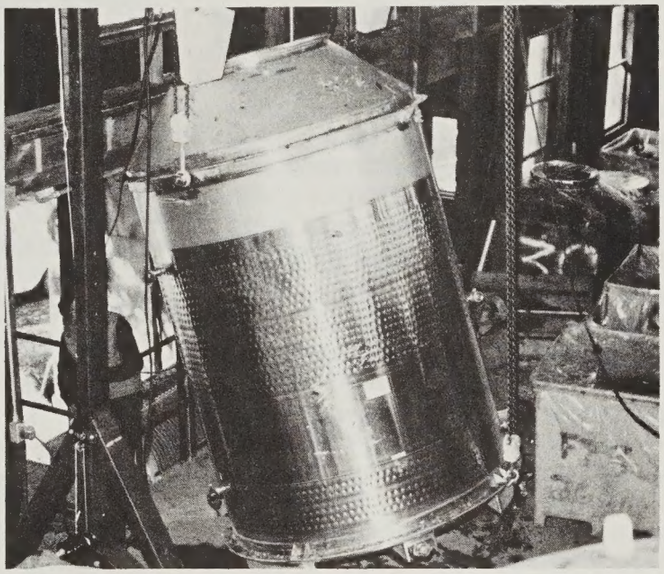
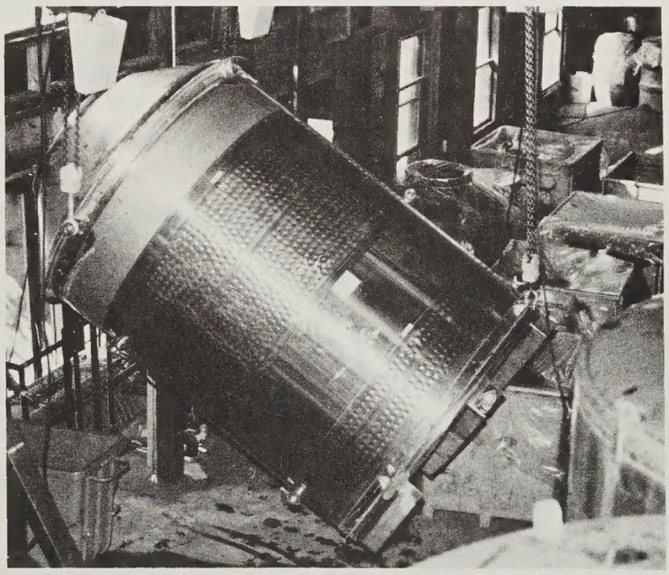
SIX-TON TANKS are hooked up to hot and cold water lines for temperature control during primary and malolactic fermentation at Ridge.

Variable capacity tanks with pneumatic lids have been made by and are available from JV Northwest Engineering, Portland, Ore. and Spokane Metal Products, Spokane, Wash. Danieli Bros. Mfg. and Santa Rosa Stainless Steel, have commitments to produce the design for customers for the '82 crush.

FERMENTER dumps pomace into press.

PALLET JACK is used to move fermenter with pomace to press pad.





OPEN FERMENTER is lifted, tilted at press pad.

Ridge photos by Mike Dagget

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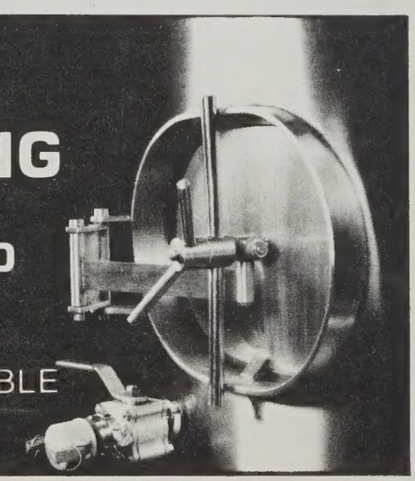

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